Title: Using Virtual Network Address Information During Communications Inventor(s): Qiaofeng Zhou Serial No: 09/768,671; Page 1 of 10

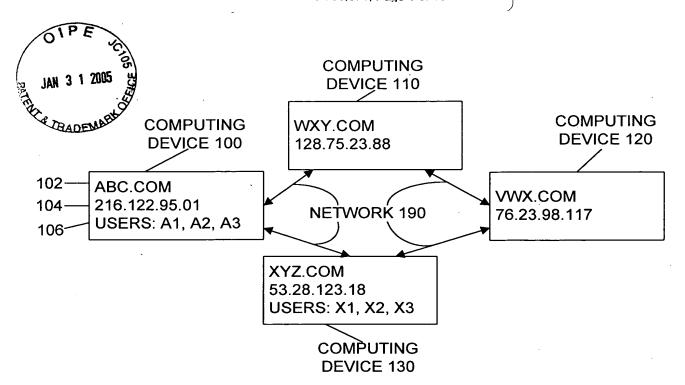


FIG. 1A (PRIOR ART)

Example message generated by User A1's local mail program

Date:

Mon, 27 Nov 00 10:18:52

From:

"Alan Smith" <a l@abc.com>

To:

x1@xyz.com, a2

Subject:

Test Message

This message is a test. The end.

FIG. 1B (PRIOR ART)

Example message as modified by local computing device 100 Sendmail program

From a1@abc.comMon Nov 27 10:19:23 2000 Message-Id: <9631121611.AA02124@abc.com>

Date:

Mon, 27 Nov 00 10:18:52

From:

"Alan Smith" <a1@abc.com>

To:

x1@xyz.com, a2

Subject:

Test Message

This message is a test. The end.

FIG. 1C (PRIOR ART)

Title: Using Virtual Network Address Information During Communications Inventor(s): Qiaofeng Zhou Serial No: 09/768,671; Page 2 of 10

bandle message as modified by remote computing device 130 Sendmail program

From a1@abc.comMon Nov 27 10:19:23 2000

Received: From abc.com [216.122.95.01] by xyz.com (8.8.4/8.8.4)

with ESMTP id BF02C24; Mon, 27 Nov 2000 10:21:46

Message-Id: <9631121611.AA02124@abc.com>

Date:

Mon, 27 Nov 00 10:18:52

From:

"Alan Smith" <a1@abc.com>

To:

x1@xyz.com, a2

Subject:

Test Message

This message is a test. The end.

FIG. 1D (PRIOR ART)

Example SMTP exchange as computer device 100 Sendmail Connects to computing device 130 Sendmail

220-xyz.com Sendmail 8.6.12/8.5 ready at Mon, 27 Nov 2000 10:22:23 -8-

220 ESMTP spoken here

>>>EHLO abc.com

250-xyz.com Hello abc.com, pleased to meet you

250 -EXPN

250-SIZE

250 HELP

>>>MAIL From:<a1@abc.com>

250 <<u>a1@abc.com</u>>... Sender ok

>>>RCPT To:<x1@xyz.com>

250 <x1@xyz.com> ... Recipient ok

>>>DATA

354 Enter mail, end with "." on a line by itself

{The message illustrated in Figure 1C is transmitted}

>>>.

250 GAA20115 Message accepted for delivery

x1@xyz.com ... Sent (GAA20115 Message accepted for delivery)

Closing connection to xyz.com

>>>QUIT

221 xyz.com closing connection

FIG. 1E (PRIOR ART)

Title: Using Virtual Network Address Information During Communications Inventor(s): Qiaofeng Zhou Serial No: 09/768,671; Page 3 of 10 COMPUTING COMPUTING TRADEN **DEVICE 100 DEVICE 110** 102 - 104 **NETWORK 190** ABC.COM -216.122.95.01 USERS: A1, A2, A3-WXY.COM **NETWORK 190** 128.75.23.88 COMPUTING **VIRTUAL DEVICE 120** COMPUTING DEVICE (VCD) 200 202 BCD.COM VWX.COM XYZ.COM 204 216.122.95.70 96.23.98.117 53.28.123.18 USERS: B1, B2, B3 USERS: X1, X2, X3 206 CDE.COM COMPUTING **VCD 210** 216.122.95.71 **DEVICE 130** USERS: C1, C2 DEF.COM 123.18.73.28 **VCD 220** USERS: D1, D2, D3 WWW.DEF.COM 123.18.73.29 -VCD 230 USERS: B1, B2, B3

FIG. 2A

Example message generated by User B1's local mail program

Date:

Mon, 27 Nov 00 10:18:52

From:

"Bob Smith"

bl@bcd.com

To:

<u>x1@xyz.com</u>, b2

Subject:

Test Message 2

This message is a test. The end.

FIG. 2B

Title: Using Virtual Network Address Information During Communications Inventor(s): Qiaofeng Zhou Serial No: 09/768,671; Page 4 of 10

JAN 3 1 2005 S

Example message as modified by virtual computing device 200 Sendmail program

From bl@bcd.com

Mon Nov 27 10:19:23 2000

Message-Id: <3431121623.4B0213D@bcd.com>

Date:

Mon, 27 Nov 00 10:18:52

From:

"Bob Smith" <b1@bcd.com>

To:

x1@xyz.com, b2

Subject:

Test Message 2

This message is a test. The end.

FIG. 2C

Example message as modified by remote computing device 130 Sendmail program

From a1@abc.comMon Nov 27 10:19:23 2000

Received:

from abc.com [216.122.95.01] by xyz.com (8.8.4/8.8.4)

with ESMTP id CD0A224; Mon, 27 Nov 2000 10:21:46

Message-Id: <3431121623.4B0213D@bcd.com>

Date:

Mon, 27 Nov 00 10:18:52

From:

"Bob Smith" <b1@bcd.com>

To:

x1@xyz.com, b2

Subject:

Test Message 2

This message is a test. The end.

FIG. 2D

Title: Using Virtual Network Address Information
During Communications
Inventor(s): Qiaofeng Zhou
Serial No: 09/768,671; Page 5 of 10

JAN 3 1 2005

Example SMTP exchange as virtual computing device 200 Sendmail connects to computing device 130 Sendmail

220-xyz.com Sendmail 8.6.12/8.5 ready at Mon, 27 Nov 2000 10:22:23 -

0800

220 ESMTP spoken here

>>>EHLO bcd.com

250-xyz.com Hello bcd.com (abc.com), pleased to meet you

250-EXPN

250-SIZE

250 HELP

>>>MAIL From:<<u>b1@bcd.com</u>>

250 <<u>b1@bcd.com</u>> ... Sender ok

>>>RCPT To:<<u>x1@xyz.com</u>>

250 <<u>x1@zxyz.com</u>> ... Recipient ok

>>>DATA

354 Enter mail, end with "." on a line by itself

{The message illustrated in Figure 2C is transmitted}

>>>.

250 GAA20115 Message accepted for delivery

x1@xyz.com ... Sent (GAA20115 Message accepted for delivery)

Closing connection to xyz.com

>>>QUIT

221 xzy.com closing connection

Error file

Host abc.com claimed to be bcd.com

FIG. 2E

Example message as modified by remote computing device 130 Sendmail program

when sent by Virtual Domain Sendmail program on computing device 100

From b1@bcd.com

Mon Nov 27 10:19:23 2000

Received:

from bcd.com [216.122.95.70] by xyz.com (8.8.4/8.8.4)

with ESMTP id CD0A224; Mon, 27 Nov 2000 10:21:46

Message-Id: <3431121623.4B0213D@bcd.com>

Date:

Mon, 27 Nov 00 10:18:52

From:

"Bob Smith" <b1@bcd.com>

To:

x1@xyz.com., b2

Subject:

Test Message 2

This message is a test. The end.

FIG. 3A

Title: Using Virtual Network Address Information During Communications Inventor(s): Qiaofeng Zhou Serial No: 09/768,671; Page 6 of 10



Example SMTP exchange as Virtual Domain Sendmail program on computing device 100 connects to computing device 130

220-xyz.com Sendmail 8.6.12/8.5 ready at Mon, 27 Nov 2000 10:22:23 – 0800

220 ESMTP spoken here

>>>EHLO bcd.com

250-xyz.com Hello bcd.com, pleased to meet you

250-EXPN

250-SIZE

250 HELP

>>>MAIL From:
bl@bcd.com>

250 <b1@bcd.com>...Sender ok

>>>RCPT To:x1@xyz.com

250 <<u>x1@xyz.com</u>>...Recipient ok

>>>DATA

354 Enter mail, end with "." on a line by itself

{The message illustrated in Figure 2C is transmitted}

·>>>,

250 GAA20115 Message accepted for delivery

x1@xyz.com... Sent (GAA20115 Message accepted for delivery)

Closing connection to xyz.com

>>>QUIT

221 xyz.com closing connection

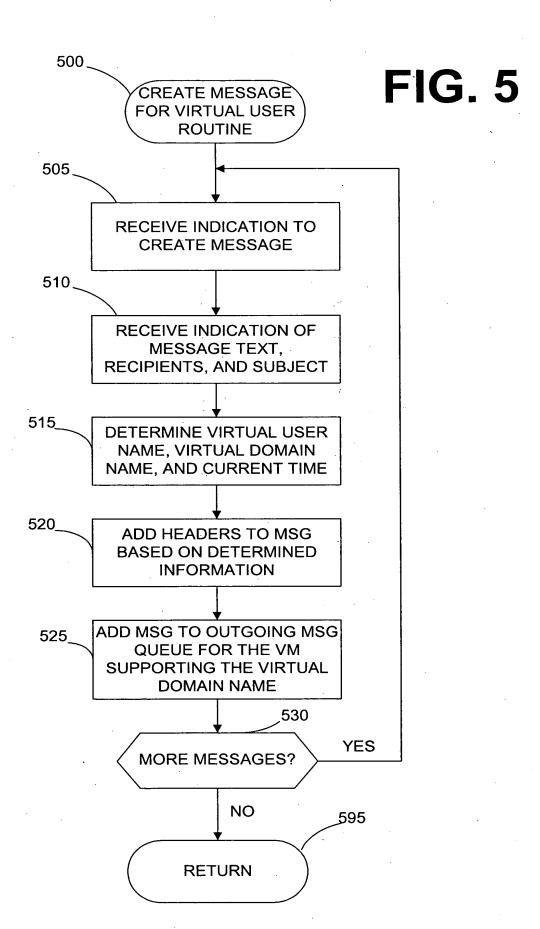
FIG. 3B

Title: Using Virtual Network Address Information During Communications Inventor(s): Qiaofeng Zhou Serial No: 09/768,671; Page 7 of 10 RADEMARK I/O DEVICES 454 I/O DEVICES 474 STORAGE 456 MAIL TRANSPORT MEMORY 477 **AGENT 479 CUSTOMER COMPUTERS 450** SERVER COMPUTERS 470 **MAIL QUEUE 473** STORAGE 471 MEMORY 457 **TELNET 459 CPU 472 CPU 452 NETWORK 480** COMPUTER SYSTEM MAIL TRANSPORTCOMPUTER SYSTEM OUTGOING MAIL VIRTUAL DOMAIN HOSTING COMPUTER SYSTEM 400 COMPUTER-READABLE **NETWORK CONN. 412** MAIL USER/STORAGE DOMAIN OUTGOING MAIL Q 424 OTHER I/O DEVICES 415 QUEUE 426 MEDIUM DRIVE 413 I/O DEVICES 410 **DISPLAY 411** DOMAIN-SPECIFIC CONFIG. INFO. 424 SW/DATA 448 RANSPORT AGENT 432 **MEMORY 430 VIRTUAL DOMAINS 440** VIRTUAL DOMAIN MAIL MAIL USER/STORAGE DOMAIN CONFIG. VIRTUAL DOMAIN STORAGE 420 **AGENTS 434 AGENT 422** NFO. 446 AGENT 442 **CPU 405**

FIG. 4

Title: Using Virtual Network Address Information During Communications Inventor(s): Qiaofeng Zhou Serial No: 09/768,671; Page 8 of 10

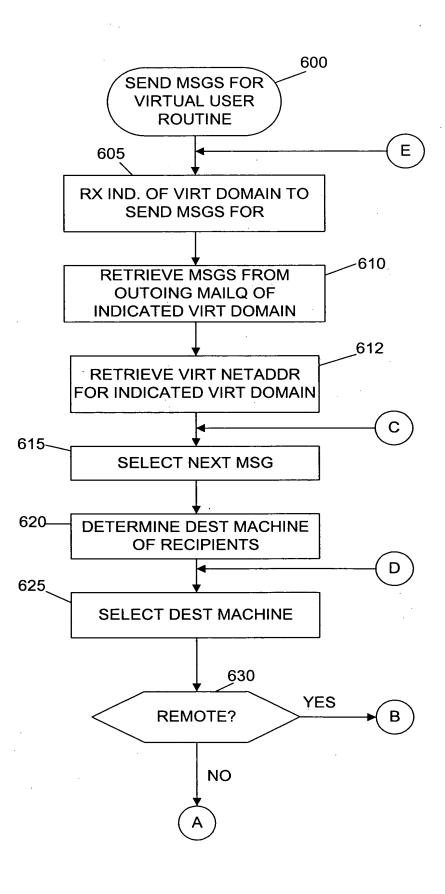




Title: Using Virtual Network Address Information During Communications Inventor(s): Qiaofeng Zhou Serial No: 09/768,671; Page 9 of 10



FIG. 6A



Title: Using Virtual Network Address Information During Communications Inventor(s): Qiaofeng Zhou Serial No: 09/768,671; Page 10 of 10



FIG. 6B

